

## **EROSION AND SEDIMENT CONTROL LAW:**

§ [10.1-561](#). State erosion and sediment control program.

A. The Board shall develop a program and promulgate regulations for the effective control of soil erosion, sediment deposition, and nonagricultural runoff that must be met in any control program to prevent the unreasonable degradation of properties, stream channels, waters and other natural resources in accordance with the Administrative Process Act (§ [2.2-4000](#) et seq.). Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to this section, § [10.1-562](#), or [10.1-570](#). Any land-disturbing activity that provides for stormwater management intended to address any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § [10.1-562](#) or [10.1-570](#).

## **EROSION AND SEDIMENT CONTROL REGULATIONS:**

4VAC50-30-40. *Minimum standards.*

An erosion and sediment control program adopted by a district or locality must be consistent with the following criteria, techniques and methods: . . . .

***19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria:***

***a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.***

***b. Adequacy of all channels and pipes shall be verified in the following manner:***

(1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or

***(2)(a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.***

***(b) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and***

***(c) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.***

c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:

(1) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel the bed or banks; or

(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;

(3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or

(4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the plan approving authority to prevent downstream erosion.

d. The applicant shall provide evidence of permission to make the improvements.

e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.

f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the locality of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.

g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transistion from the facility to the receiving channel.

- h. All on-site channels must be verified to be adequate.
- i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
- j. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
- k. *All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.*

Statutory Authority

§§[10.1-502](#) and [10.1-561](#) of the Code of Virginia.

Historical Notes

Derived from VR625-02-00 §4; eff September 13, 1990; amended, Virginia Register Volume 11, Issue 11, eff. March 22, 1995.

### **STORMWATER MANAGEMENT LAW:**

§ [10.1-603.4](#). Development of regulations.

The Board is authorized to adopt regulations that specify minimum technical criteria and administrative procedures for stormwater management programs in Virginia. The regulations shall: . . .

7. Require that stormwater management programs maintain after-development runoff rate of flow and characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology, or improve upon the contributing share of the existing predevelopment runoff characteristics and site hydrology if stream channel erosion or localized flooding is an existing predevelopment condition. Any land-disturbing activity that provides for stormwater management shall satisfy the conditions of this subsection if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a

good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to this section, or any ordinances adopted pursuant to § [10.1-603.3](#) or [10.1-603.7](#);

## **PROPOSED STORMWATER MANAGEMENT REGULATIONS (To date):**

### **4VAC 50-60-66 Water Quantity**

In order to protect state waters from the potential harms of unmanaged quantities of stormwater runoff, the following technical criteria and statewide standards for stormwater management shall apply to land disturbing activities:

A. Properties and state waters receiving stormwater runoff from any land-disturbing activity shall be protected from sediment deposition, erosion and damage due to changes in runoff rate of flow and hydrologic characteristics, including but not limited to, changes in volume, velocity, frequency, duration, and peak flow rate of stormwater runoff in accordance with the minimum water quantity standards set out in this section.

B. Pursuant to §10.1-603.4 subsection 7, a local program shall require that land disturbing activities:

1. Maintain post-development runoff rate of flow and runoff characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology.

2. If stream channel erosion or localized flooding exists at the site prior to the proposed land disturbing activity, the project shall improve to the extent practicable upon the contributing share of the existing predevelopment runoff characteristics and site hydrology.

C. For the purposes of determining compliance with subsection B, a local program shall require the following:

1. Pre-development runoff characteristics and site hydrology shall be verified by physical surveys, geotechnical investigations, and calculations that are consistent with good engineering practices that are acceptable to the local program authority.

2. Flooding and channel erosion impacts to receiving streams due to land-disturbing activities shall be calculated for each point of discharge from the land disturbance and such calculations shall include any runoff from the balance of the watershed which also contributes to that point of discharge. Flooding and channel erosion impacts shall be evaluated taking the entire upstream watershed into account, including the modifications from the planned land disturbance. Good engineering practices and calculations shall be used to demonstrate post development runoff characteristics and site hydrology, and flooding and channel erosion impacts.

3. For purposes of computing predevelopment runoff, all pervious lands in the site shall be assumed prior to development to be in good condition (if the lands are pastures, lawns, or parks), with good cover (if the lands are woods), or with conservation treatment (if the lands are cultivated); regardless of conditions existing at the time of computation. Predevelopment runoff calculations utilizing other land cover values may be utilized where stream channel erosion or localized flooding at the site does not exist provided that

it is demonstrated to and approved by the local program authority that actual site conditions warrant such considerations.

D. Notwithstanding the requirements of subsection C, any land disturbing activity shall be deemed to have satisfied the requirements of subsection B if the practices implemented on the site are designed to:

1. Detain the water quality volume and to release it over 48 hours;

2. Detain and release over a 24-hour period the expected rainfall resulting from the one year, 24 hour storm; and

3. Reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming that it was in good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition.

Such land disturbing activity shall further be exempt from any flow rate capacity and velocity requirements for natural or manmade channels as defined in any other section of this regulation.